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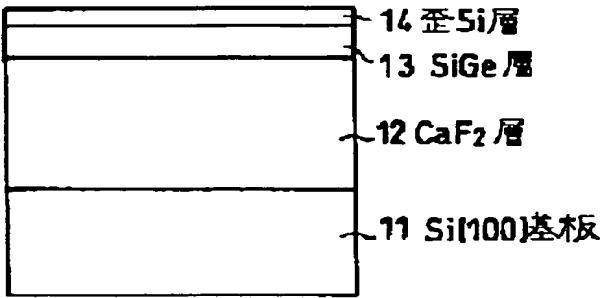
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TITLE : SEMICONDUCTOR DEVICE



ABSTRACT : PROBLEM TO BE SOLVED: To reduce the thickness of a crystal layer as a substratum for obtaining a strained silicon layer, by forming semiconductor crystal which has a lattice constant different from that of an insulating crystal thin film and a thickness free from lattice relaxation, on the insulating crystal thin film formed on a crystal substrate.

SOLUTION: A CaF<sub>2</sub> layer 12 as an insulating crystal thin film is formed on a silicon substrate 11 as a crystal substrate which has (100) azimuth on a crystal surface. An side layer 13 as a first crystal thin film is grown on the CaF<sub>2</sub> layer 12, and grown up to, e.g. 100 nm in film thickness. At this time, the SiGe layer 13 is excellently lattice-matched with the CaF<sub>2</sub> layer, and strain in the SiGe layer 13 hardly exists after growth of 100 nm. An Si layer 14 is grown up to, e.g. 15 nm in film thickness continuously with the growth of the SiGe layer 13. The Si layer 14 is maintained in the state that tensile strain is applied. Thus the Si layer 14 to which tensile strain is applied can be formed on the thin SiGe layer 13.

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